MARVEL

BIOSCIENCES CORP.

Corporate Presentation
Dec 2024

MRVL–TSXV MBCOF–OTC

Disclaimer

Forward-Looking Information and Statements

This presentation contains certain forward-looking statements and forward-looking information (collectively referred to herein as "**forward-looking statements**") within the meaning of applicable Canadian securities laws. All statements other than statements of present or historical fact are forward looking statements. Forward looking information is often, but not always, identified by the use of words such as "could", "should", "can", "anticipate", "expect", "believe", "will", "may", "projected", "sustain", "continues", "strategy", "potential", "projects", "grow", "take advantage", "estimate", "well positioned" or similar words suggesting future outcomes. In particular, this presentation contains forward looking statements relating to future opportunities, business strategies and objectives and management plans, competitive advantages, the expected financial performance of the Marvel Biosciences Corp. ("**Marvel**" or the "**Corporation**").

The forward looking statements regarding the Corporation are based on certain key expectations and assumptions of the Corporation concerning anticipated financial performance, business prospects, strategies, tax laws, the sufficiency of budgeted capital expenditures in carrying out planned activities, the availability and cost of labour and services and the ability to obtain financing on acceptable terms, all of which are subject to change based on market conditions and potential timing delays. Although management of the Corporation consider these assumptions to be reasonable based on information currently available to them, they may prove to be incorrect.

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Readers are cautioned that the foregoing list is not exhaustive.

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All amounts are expressed in Canadian dollars unless otherwise noted.

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Executive Summary

- Marvel has developed MB-204, a novel patented inhibitor of the A2a receptor for neurological disorders, led by Dr. Mark Williams who has **successfully redeveloped two prior compounds**
- **Exceptional immediate efficacy** in autism (Rett) and depression from third party animal experiments, diseases where there is no effective treatments today
- Nov 2024 - Collaboration partner iBraiN Institute conducted studies which MB-204 **outperformed Daybue**, an FDA approved drug for Rett Syndrome with sales of ~$500M since 2023
- **Phase 1 Clinical Trial ready** (cGMP and 4w GLP toxicology is completed) – the path to commercialization is derisked as MB-204 is redeveloped from off-patent, FDA approved drug
- Other collaborations in Alzheimers and Fragile X are opportunities within large markets **($50B TAM)** and smaller underserved diseases which is expected to attract pharma partners

Problem: Autism, Depression & Alzheimer's Disease Remain Undertreated

Autism

1 in 36 children affected[1]

$450B est social cost in 2025[2]

4x depression rates over neurotypical[3]

MB204 Focus: Socialization

Depression

1 in 8 adults takes an anti-depressant[4]

$330B est in US alone for economic burden[5]

SSRIs are under reconsideration

MB204 Focus: Motivation

Alzheimer's

1 in 10 persons over 65 affected[6]

$360B est care costs to US in 2024[7]

Up to 40% have depression[8]

MB204 Focus: Memory

Total Addressable Market > $50+ Billion[12]

Sources

1) https://www.cdc.gov/autism/data-research/index.html
2) https://pubmed.ncbi.nlm.nih.gov/26183723/
3) https://pubmed.ncbi.nlm.nih.gov/29497980/
4) https://www.cdc.gov/nchs/products/databriefs/db377.htm
5) https://pmc.ncbi.nlm.nih.gov/articles/PMC10499687/
6) https://www.alz.org/alzheimers-dementia/facts-figures
7) https://www.alz.org/alzheimers-dementia/facts-figures
8) PMID: 38623385

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Autism Spectrum Disorder: Specific conditions and treatments

Rett Syndrome

Daybue (Trofinetide)

#patients: 6,000-9,000 in USA[1]

ACADIA

Only FDA approved drug (2023)
Est. 2024 Net sales:
US$370-420 million[2]

Fragile X

Zatolmilast (Phase 3)

#patients: >100,000 in USA[3]

No approved treatments
Symptomatic relief only

Sources
1) Acadia Pharmaceuticals Inc, Data on file. RTT US Prevalence. March 2022
2) https://www.kennedykrieger.org/patient-care/conditions/fragile-x-syndrome#:~:text=Over%20100%2C000%20Americans%20have%20FXS%3B%20moreover%2C%20it%20is%20estimated%20that,million%20are%20Fragile%20X%20carriers.
3) https://www.globenewswire.com/news-release/2024/09/30/2954932/0/en/Autism-Spectrum-Disorder-Treatment-ASD-Market-to-hit-USD-52-billion-by-2032-says-Global-Market-Insights-Inc.html and https://www.factmr.com/report/3215/depression-drugs-market#:~:text=Depression%20Drugs%20Market%20Outlook,of%20the%20psychotropic%20drugs%20market.&text=Sales%20of%20depression%20drugs%20are,US%24%2020%20Bn%20by%202031

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Deal Economics of the Two Leading Compounds

Preclinical → Phase 1 → Phase 2 → Phase 3/ Commercial

Rett Syndrome: Daybue™ (trofinetide)

Neuren Pharmaceuticals (**Rett**/FXS)

Acadia Pharmaceutical

2018: **$10M** Milestones: **$50M** Royalties: **$0.35B**

- Deal NPV of ~US$120M
- Daybue was in Phase 2 trials at the time of the deal

Fragile X: **Zatolmilast**

Tetra Therapeutics (Rett/**FXS**/AD)

Shinogi & Co. Ltd.

2018: **$40M** Milestones: **$0.12B** Royalties: **$0.36B**

- Deal NPV ~US$90M
- Zatolmilast was in Phase 2 trials at the time of the deal

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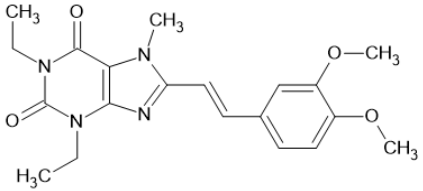
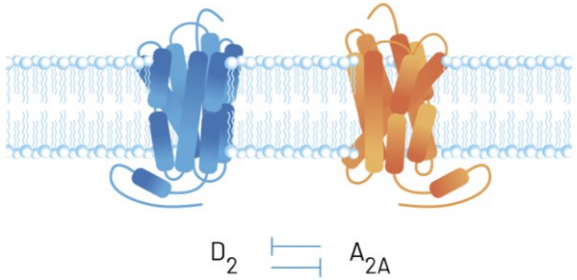
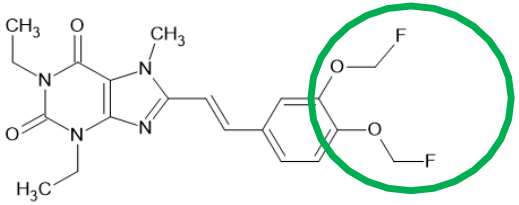
Solution: Marvel Redeveloped an Approved Drug for A Well-Known Target







Istradefylline
Approved for Parkinson's
Third Party Science
Off-Patent

Activates Dopamine D2
Socialization - Autism
Motivation - Depression
Memory – Alzheimer's

MB-204
Patented Istradefylline Analog
De-Risked Asset
Strong Preclinical Testing

Istradefylline and MB-204 are A2a receptor antagonists that allow Dopamine D2 Receptor activation

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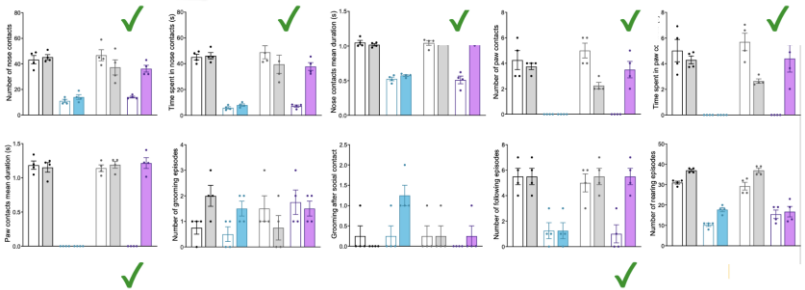
MB-204 - Immediate Effect on Autism in Rett Syndrome Model

Collaboration funded by the iBraiN Institute and testing conducting by experts in the field

Conducted studies on MB-204 in a Knockout Autism Model, observing significant improvements in sociability and reductions in repetitive behaviors at low doses



MB-204 outperformed Daybue, the approved drug for Rett Syndrome

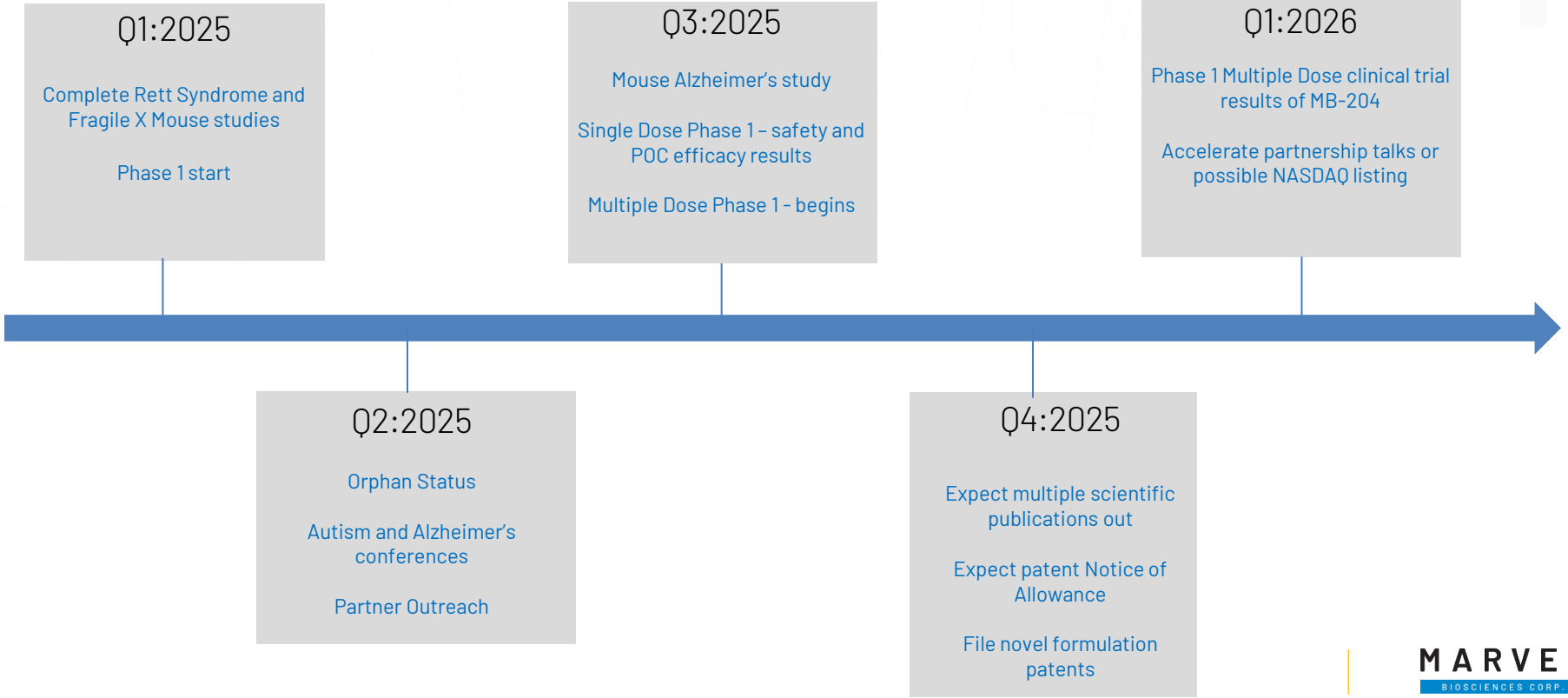
Rett Syndrome

1 in 10,000 females

Mecp2 gene mutation (orphan)

Daybue is the only FDA approved drug

Short Term Catalysts



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Collaboration to Test MB-204 in Fragile X Models

Collaboration funded by FRAXA

Starting in Q4 2024, FRAXA will be preclinically testing MB-204 in a Fragile X Syndrome (FXS) model

MB-204 has previously shown effectiveness in reducing autism-like behaviours in the Oprm1 and Mecp2 models

Fragile X Syndrome

1 in 7000 males / 11,000 females

Fmr1 gene mutation (orphan)

No approved drugs

Collaboration to Test MB-204 in Alzheimer's Tau Models

Partnership with Dr. Planel

MB-204 reduced tau hyperphosphorylation, a key marker of Alzheimer's disease, in an acute in vivo study

A chronic preclinical study will assess MB-204's impact on behavior, biomarkers, and its ability to slow or halt Alzheimer's progression.

Grant to Test MB-204 in Alzheimer's Disease

3-month 2 dose study in 5xFAD mice (starting at 6 months of age)

- Cognitive Test: Morris Water Maze
- Biomarkers: GFAP, Amyloid, NFL
- Histology: Tau AT8 phosphorylation

Dosing expected to begin Jan 2025 at Scantox (Austria)

IND*-Enabling Toxicology and Manufacturing Completed – Clinic Ready

4-week GLP** toxicology in rats and beagle dogs completed & No Adverse Events Levels (NOAEL) determined:

150 mg/kg/day

10 mg/kg/day

- Genotoxicity studies completed – no issues
- cGMP*** active pharmaceutical ingredient (API) ready – 2 kg
- Expect once-a-day dosing

*Investigational New Drug
**Good Laboratory Practice
***Current Good Manufacturing Practice

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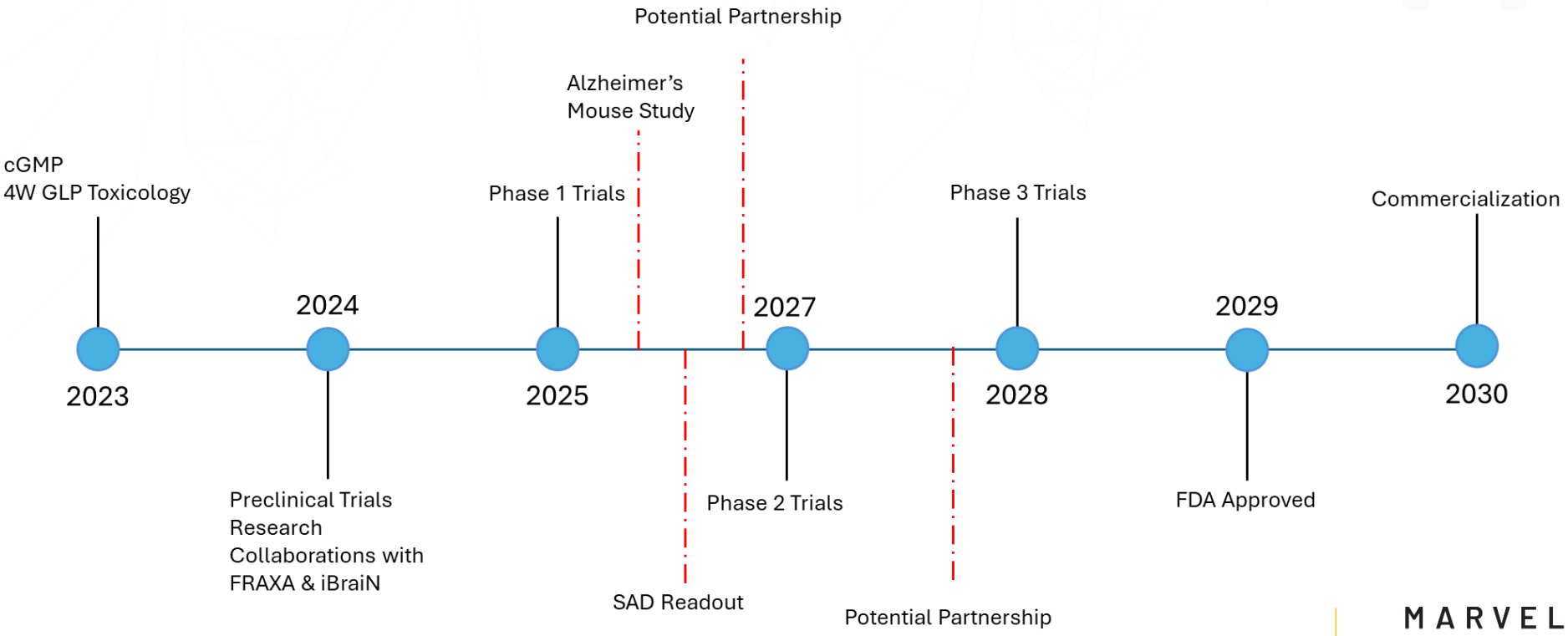
Overall Long-Term Strategic Plan



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Marvel Biosciences Investment Opportunity

Canadian-Based Biotechnology

Mission

- Lean enterprise
- Led by Science and Quality focused(3rd party studies)

Major Milestones

- Patent Notice Of Allowance
- GLP Toxicology Completed
- cGMP Drug Supply Completed
- Clinic Ready
- Collaborations for Autism

Upcoming

- Data from autism
- Phase 1

Company Information

Ticker: MRVL, MBCOF
Exchange: TSXV, OTC
Headquarters: Calgary, Alberta, Canada
Shares Outstanding: 44.8 million
Market Cap: $7.4 million

Insider Ownership: 30.3%

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Management

J. Roderick Matheson

Chief Executive Officer and Director

Mr. Matheson has spent nearly 40 years of his career in the investment and capital markets arena. Rod is an accomplished senior executive in the diverse areas of finance, entrepreneurship, investing and risk management. Among his achievements are multiple financings exceeding one billion dollars of both public and private companies in the biotechnology, technology, mining, oil and gas industries, as well as numerous venture start-ups. Rod began his career at Wood Gundy in 1983, becoming Vice President and Director. He left Wood Gundy in 1995 to spearhead the Calgary operations of Canaccord Capital Corporation and after several years moved to Bolder Investment Partners, successfully launching their Calgary operations. In 2010 Bolder merged and Rod, along with his colleagues, moved to other independent investment firms, concluding with Aligned Capital Partners Inc. In late 2019, Rod created Renaissance Mercantile Corp., a privately-owned merchant bank where he is Executive Chairman and is a shareholder of Marvel.

Dr. Mark Williams

President, Chief Science Officer and Director

Mark Williams is currently the CSO and President of Marvel. He was previously CSO of Algernon Pharmaceuticals and lead the identification and clinical testing of NP-120 through Phase 2 trials and later sold to a private US-based biotech. Mark was also previously CSO at DiaMedica (Nasdaq) where he led the development of DM-199 (recombinant human tissue kallikrein, KLK1) through pre-clinical testing, bio-manufacturing, toxicology and clinical testing (Phases 1 and 2). DM-199 was granted FDA fast-track designation for the treatment of ischemic stroke and is currently in Phase 3 trials. He has also led the development of several other compounds from identification to Phase 2 testing. Mark received his BSc in biochemistry from Queen's University, his PhD in Microbiology & Immunology from the University of Alberta and his MBA (finance) from the University of Manitoba.

Harry Nijjar - CPA, CMA

Chief Financial Officer

Mr. Nijjar joined Marvel in February 2022. Harry has worked extensively with public companies across various industries, helping them navigate the regulatory and financial reporting environment. This experience allows him to quickly adapt to new clients and industries and develop the appropriate accounting systems to create an efficient finance department. Additionally, Harry focuses on learning about the business his clients are engaged in to be able to provide better analysis and support for the decisions impacting the client. Harry has worked with clients in various industries including both revenue and non-revenue generating clients. Over this time, he has worked with multi-subsidiary and multi-currency clients and helped navigate complex scenarios such as multiple business combinations, valuation exercises, spin-out transactions and implementation of new accounting systems including complex revenue recognition models. Certified Management Accountant, CMA Canada – (Later Chartered Professional Accountants, Canada) Bachelor of Commerce (Accounting),University of British Columbia, Sauder School of Business.

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Board of Directors

Neil A. Johnson – Director

Mr. Johnson has over 30 years of experience in investment banking, merchant banking and research analysis in both the Canadian and UK capital markets. Mr. Johnson is presently, and has been since June 2015, Executive Director and Chief Executive Officer of Duke Royalty Ltd. (AIM: DUKE), a royalty investment company, with responsibility for the overall strategic direction and performance of the group. Previously, Mr. Johnson worked for Canaccord Genuity rising to the positions of Head of Corporate Finance (Europe), Global Head of Technology, and a member of the Global Executive Committee. During his tenure, Canaccord Genuity became the leading broker on AIM and raised over $7 billion of equity for Canadian-domiciled companies. Mr. Johnson is a graduate of the Richard Ivey School of Business at Western University in London, Ontario and holds the designation of Chartered Financial Analyst (CFA).

S. Randall Smallbone – Director

Mr. S. Randall Smallbone is the President, CEO and a Director of Astron Connect Inc. In addition, Mr. Smallbone is the Chair of the Board of Directors of both The Burlington Economic Development Corporation and Joseph Brant Hospital. He is also a Board member of Entourage Health Corp., Hanwei Energy Services Corp. and on the Advisory Board of Pneu-Hyd Industries Inc. Mr. Smallbone has been the CFO of three Public Companies, Migao Corporation, KCP Income Fund and Decoma International Inc (Magna International Inc.). He was also on the Board of Norcast Income Fund and numerous other private and NFP Boards.

Babak Pedram – Director

Mr. Pedram brings a vast degree of business, capital markets and scientific experience to Marvel's Board of Directors. He is a seasoned capital market professional with over 15 years of experience as an investment banker, investor relations, and capital markets advisor to numerous biotech, healthcare and technology companies based in Canada, the United States and Sweden. Mr. Pedram is the founder and president of Virtus Advisory Group, a Toronto-based capital markets advisory firm. He is the co-founder of several successful start-ups, including two publicly traded companies listed on the Toronto Stock Exchange. Mr. Pedram has both Bachelor and Master of Science degrees from Queen's University.

Scientific Advisory Board

Dr. David Blum

Dr. Blum adds crucial depth to the scientific board for his highly relevant research in the A2A receptor antagonists in cognition, brain lesions, and tau pathology for applications in Alzheimer's Disease (AD). Dr. Blum is a Senior Investigator and a Research Director of the Alzheimer & Tauopathies team at Lille Neuroscience & Cognition Inserm center in Lille. Dr. Blum is an expert in neuropathological studies on Tau (and its link to metabolism & neuroinflammation) and purine (and the role of purinergic signalling in neurodegeneration). One of Dr. Blum's current projects is to provide novel insights into the impact of neuro-glial A2A signalling on cognition and brain lesions in transgenic AD models. This work emphasizes that A2A receptor dysfunction is instrumentally involved in the loss of neuronal synapses driven by Tau pathology in AD and Tauopathies.

Dr. Jared Young, Ph.D.

Dr. Young is a Professor in the Department of Psychiatry at the University of California San Diego and brings significant expertise to the scientific board as a leader in translational models to validate drugs developed for neuropsychiatric disorders. Dr. Young investigates the molecular biology and neural circuitry underlying behavioral abnormalities in major neuropsychiatric disorders (using reverse-translated paradigms). Debilitating forms of mental illness are prevalent, but treatment options for these disorders remain limited. One major roadblock for treatment development has been the scarcity of effective cross-species models. However, Dr. Young has refined new and effective cross-species models. Dr. Young uses cutting-edge neuroscience to develop novel and sophisticated cross-species models to identify targetable mechanisms to treat mental illnesses (i.e., using the human 5-choice continuous performance task, initially created for use in mice).

Professor Bruce N. Cronstein, MD

Dr. Cronstein is a Professor at the NYU Grossman School of Medicine (for the Departments of Medicine, Pharmacology, and Pathology). Prof. Cronstein is considered the world expert on adenosine, and has led adenosine research for over 38 years, publishing a monumental 365 peer-reviewed articles. The Cronstein laboratory has explored the role of adenosine across multiple thematic areas (including studying its application in neutrophils, inflammation, methotrexate treatments, and since the early 2000s, the adenosine A2A receptor). Prof. Cronstein has led the research of A2A receptor functions, including its roles in dermal fibrosis and scarring, hepatic fibrosis and fatty liver, bone healing, and more recently, chondrocyte metabolism and cartilage matrix maintenance. Prof. Cronstein's discoveries have led to novel therapeutics and treatments now considered best practice.

Professor Frank Schweizer

Dr. Schweizer is a Professor of Chemistry in the Department of Chemistry and Medical Microbiology & Infectious Diseases at the University of Manitoba. Prof. Schweizer has published > 130 papers on Medicinal- and Carbohydrate Chemistry and holds over ten patents. Prof. Schweizer is a leader in translational medical treatments, and his research focuses on preclinical drug discovery and development. Currently, Prof. Schweizer is working on applications to overcome drug resistance for antibiotic-resistant bacteria and chemotherapy-resistant cancers.

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